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NEWS 17	Dec 17	TOXCENTER enhanced with additional content
NEWS 18	Dec 17	Adis Clinical Trials Insight now available on STN
NEWS 19	Jan 29	Simultaneous left and right truncation added to COMPENDEX, ENERGY, INSPEC
NEWS 20	Feb 13	CANCERLIT is no longer being updated
NEWS 21	Feb 24	METADEX enhancements
NEWS 22	Feb 24	PCTGEN now available on STN
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NEWS 24	Feb 26	NTIS now allows simultaneous left and right truncation
NEWS 25	Feb 26	PCTFULL now contains images
NEWS 26	Mar 04	SDI PACKAGE for monthly delivery of multifile SDI results
NEWS 27	Mar 19	APOLLIT offering free connect time in April 2003
NEWS 28	Mar 20	EVENTLINE will be removed from STN
NEWS 29	Mar 24	PATDPAFULL now available on STN
NEWS 30	Mar 24	Additional information for trade-named substances without structures available in REGISTRY
NEWS 31	Apr 11	Display formats in DGENE enhanced
NEWS 32	Apr 14	MEDLINE Reload
NEWS 33	Apr 17	Polymer searching in REGISTRY enhanced
NEWS 34	Apr 21	Indexing from 1947 to 1956 being added to records in CA/CAPLUS
NEWS 35	Apr 21	New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX
NEWS 36	Apr 28	RDISCLOSURE now available on STN

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FILE 'HOME' ENTERED AT 15:38:00 ON 02 MAY 2003

=> file ca, biosis, medline

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FILE 'BIOSIS' ENTERED AT 15:39:21 ON 02 MAY 2003
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FILE 'MEDLINE' ENTERED AT 15:39:21 ON 02 MAY 2003

=> s chondroitinase?
L1 5402 CHONDROITINASE?

=> s cancer?
L2 1055443 CANCER?

=> s l1 and l2
L3 92 L1 AND L2

=> s l1 (p) l2
L4 84 L1 (P) L2

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5 42 DUP REM L4 (42 DUPLICATES REMOVED)

=> d 1-42 ab,bib

L5 ANSWER 1 OF 42 CA COPYRIGHT 2003 ACS
AB A method for the treatment of cancer is disclosed which is capable of directing supra-LDs of radiation, called Hot-Spots, virtually exclusively to the cancer. The present invention involves a multi-step therapy process and includes a class of novel chem. agents. In accordance with the present invention, it was discovered that sol. precipitable materials can be made to accumulate as non-digestible ppts. in the extra-cellular fluid in the cancer region as a result of non-mammalian enzyme action. Ppt. accumulation is achieved by the prior administration of a bispecific reagent with a non-mammalian enzyme moiety and a targeting agent capable of binding to non-endocytosing receptors of target cancer cells. A sol. radioactive toxic therapeutic agent is then administered, the sol. toxic therapeutic agent being adapted to be converted by the non-mammalian

enzyme moiety of the bound bispecific reagent into a new form which is retained adjacent to the target cancer cells for an extended period of time, thereby generating Hot-Spots which non-selectively kill all cells in the cancer region adjacent to the bispecific reagent.

AN 138:217534 CA

TI Method and composition for treating cancer by converting soluble radioactive toxic agents into insoluble radioactive toxic precipitates via the action of non-mammalian enzymes bound to the non-endocytosing receptors of target cells

IN Rose, Samuel

PA USA

SO U.S. Pat. Appl. Publ., 64 pp.
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003045458	A1	20030306	US 1997-782590	19970113
PRAI	US 1997-782590		19970113		

L5 ANSWER 2 OF 42 CA COPYRIGHT 2003 ACS

AB The invention concerns the use of a compd. antagonist of the ESM-1 protein for making a medicine for treating cancer. Antagonists may include antibodies, antisense oligonucleotides, and peptide fragments of ESM-1.

AN 136:390975 CA

TI Use of a compound antagonist of the ESM-1 protein for producing a medicine for treating cancer

IN Lassalle, Philippe; Bechard, David; Tonnel, Andre-Bernard

PA Institut Pasteur de Lille, Fr.; Institut National de la Sante et de la Recherche Medicale (INSERM)

SO PCT Int. Appl., 82 pp.
CODEN: PIXXD2

DT Patent

LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002038178	A1	20020516	WO 2001-FR3475	20011108
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	FR 2816214	A1	20020510	FR 2000-14422	20001109
	AU 2002018342	A5	20020521	AU 2002-18342	20011108
PRAI	FR 2000-14422	A	20001109		
	WO 2001-FR3475	W	20011108		

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 1

AB Exposure to AG73, a synthetic peptide (LQVQLSIR) from the C-terminal region of the laminin .alpha.1 chain, induces a malignant phenotype in B16F10 melanoma cells. Coinjection of this peptide with the cells results in an increase of lung tumors and also the formation of liver tumors in .apprx.50% of the mice (W. H. Kim et al., Int. J. **Cancer**, 77: 632-639, 1998). Here we have characterized the cell surface receptor and its functional groups on B16F10 cells. Peptide affinity chromatog. identified a cell surface protein eluting with 1 M NaCl, which ran in SDS gels as a broad band of Mr .apprx.150,000-200,000. Digestion with

heparitinase and **chondroitinase** produced a core protein of lower mol. wt. (Mr .apprx.90,000). Involvement of the glycosaminoglycan (GAG) side chains was demonstrated by inhibition of cell binding to the peptide by heparin, heparan sulfate, and chondroitin sulfate B, but not by chondroitin sulfates A or C, or hyaluronic acid. The IC50 for heparin was the lowest, followed by heparan sulfate, then chondroitin sulfate B, suggesting that the overall sulfation of the GAG side chain is crit. This was confirmed by inhibition of attachment with chem. modified heparin and heparan sulfate, which also showed that N or O linkages were not important for function. Using sized heparin fragments to inhibit cell binding to the peptide demonstrated that 16-mer is the min. length required. B16F10 cells form a network when grown on Matrigel, and this is prevented by addn. of the AG73 peptide. The GAGs alone did not affect network formation, but heparin, heparan sulfate, and chondroitin sulfate B reversed the inhibitory effect of the peptide, whereas other GAGs were inactive. Furthermore, removal of cell surface GAGs inhibited cell attachment to the peptide. Cells treated with glycosidases and coinjected with the peptide formed liver tumors equal to the control group receiving no peptide, suggesting that the GAGs play an early role in peptide-mediated tumor metastasis. These data indicate that the B16F10 cell receptor for a laminin metastasis-promoting sequence is a heparan sulfate/chondroitin sulfate-contg. proteoglycan, and these GAG side chains are functionally important in the cell-peptide interaction.

AN 137:167275 CA

TI The B16F10 cell receptor for a metastasis-promoting site on laminin-1 is a heparan sulfate/chondroitin sulfate-containing proteoglycan

AU Engbring, Jean A.; Hoffman, Matthew P.; Karmand, Arezo J.; Kleinman, Hynda K.

CS Craniofacial Developmental Biology and Regeneration Branch, National Institute of Dental and Craniofacial Research, NIH, Bethesda, MD, 20892-4370, USA

SO Cancer Research (2002), 62(12), 3549-3554
CODEN: CNREA8; ISSN: 0008-5472

PB American Association for Cancer Research

DT Journal

LA English

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 2

AB Glycosaminoglycans in normal and **cancerous** human laryngeal cartilage were isolated and characterized by means of enzyme susceptibility and high performance liq. chromatog. The known mammalian glycosaminoglycans were identified in all samples but their content and compn. varied between normal and malignant samples. Chondroitin/dermatan sulfate was the major glycosaminoglycan in all cases, but its relative proportion was decreased in malignant samples. Its sulphation pattern showed that in normal samples it was sulfated mainly at the C6 position of galactosamine, whereas in malignant samples it was sulfated mainly at C4. Dermatan sulfate, expressed as a result of the different digestion of samples with **chondroitinases**, was present in very small amts. in normal samples (2.7% of total sulfated glycosaminoglycans) but increased in proportion up to 27.7% in malignant samples. The content of oversulfated chondroitin/dermatan was increased twofold in malignant samples. The content of heparan sulfate was increased almost fivefold in malignant samples as compared to normal ones. The content of hyaluronan was increased in malignant samples 3.5-fold, amounting to up to 11.4% of total glycosaminoglycans. These dramatic changes in the content and compn. of glycosaminoglycans seemed to be characteristic of the tumor and independent of its status.

AN 137:308383 CA

TI Alterations in the content and composition of glycosaminoglycans in human laryngeal carcinoma

AU Papadas, Th. A.; Stylianou, M.; Mastronikolis, N. S.; Papageorgakopoulou,

N.; Skandalis, S.; Goumas, P.; Theocharis, D. A.; Vynios, D. H.
CS Department of Otolaryngology, University Hospital, Patras, Greece
SO Acta Oto-Laryngologica (2002), 122(3), 330-337
CODEN: AOLAAJ; ISSN: 0001-6489
PB Taylor & Francis
DT Journal
LA English
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 42 CA COPYRIGHT 2003 ACS
AB A highly purified and specific glycosaminoglycan degrading enzyme, **chondroitinase** AC, and to a lesser extent, **chondroitinase** B, can be used in the treatment of metastatic **cancers** and in other disorders characterized by angiogenesis. The enzymic removal of chondroitin sulfates A and C, and to a lesser extent, chondroitin sulfate B, from cell surfaces directly decreases the ability of tumor cells to invade blood vessels and thus prevents the formation of metastatic, or secondary tumors; inhibits tumor cell growth; and decreases angiogenesis by inhibiting both endothelial cell proliferation and capillary formation. Decreasing the formation of new blood vessels into the tumor in turn decreases the potential for tumor growth, and further decreases the ability of tumor cells to invade the bloodstream. These effects are opposite to the pro-metastatic effects of tumor-secreted heparanase.
AN 134:361354 CA
TI Attenuation of tumor growth, metastasis and angiogenesis
IN Denholm, Elizabeth M.; Lin, Yong-qing; Silver, Paul J.
PA Ibex Technologies, Inc., USA
SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001035977	A2	20010525	WO 2000-US31663	20001117
	WO 2001035977	A3	20020117		
	WO 2001035977	C2	20020725		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1231935	A2	20020821	EP 2000-978781	20001117
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI	US 1999-165957P	P	19991117		
	WO 2000-US31663	W	20001117		

L5 ANSWER 6 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 3
AB A sensitive and accurate quant. assay for the measurement of minor amts. of chondroitin/dermatan sulfate and heparan sulfate that does not require specific app. or reagents is described. The assay involves labeling of chondroitin sulfate A following reaction of carboxyl groups with biotin hydrazide in the presence of carbodiimide. ELISA plate wells were coated with glutaraldehyde and then spermine was coupled to it via a Schiff's base bond. In such activated wells, the biotinylated mols. were readily bound and detected after the interaction with avidin-peroxidase conjugates and the subsequent enzymic assay. Chondroitin/dermatan sulfate and heparan sulfate competed this interaction in a linear manner.

Disaccharides derived from chondroitin sulfate A did not act as competitors, while heparan sulfate disaccharides showed significant competition. From the competition, before and after digestion with either **chondroitinase** ABC or heparitinases, the amts. of chondroitin sulfate and heparan sulfate in a sample could be calcd. The assay was applied for the detn. of sulfated glycosaminoglycans in normal and **cancerous** human laryngeal cartilage samples. By using this procedure, the accurate detn., esp., of heparan sulfate in a mixt. of glycosaminoglycans was achieved, which otherwise would require the use of very expensive technol.

AN 136:116438 CA
TI A solid phase assay for the determination of heparan sulfate and its application to normal and cancerous human cartilage samples
AU Vynios, D. H.; Papadas, Th. A.; Faraos, A.; Mastronikolis, N. S.; Goumas, P.; Tsiganos, C. P.
CS Laboratory of Biochemistry, Department of Chemistry, University Hospital, University of Patras, Patras, 261 10, Greece
SO Journal of Immunoassay & Immunochemistry (2001), 22(4), 337-351
CODEN: JIIOAZ; ISSN: 1532-1819
PB Marcel Dekker, Inc.
DT Journal
LA English
RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 4
AB The chondroitin sulfate excreted in the urine of 10 patients with **cancer** of the head and neck and 27 healthy subjects was analyzed. The disaccharide products formed from chondroitin sulfate excreted by these 10 patients by action of **chondroitinase** ABC show a significant ($P < 0.0001$) relative increase of nonsulfated disaccharide (35.6% +- 5.7%) when compared with the nonsulfated disaccharide (10.0% +- 0.9%) present in the chondroitin sulfate of 27 healthy subjects. In 6 patients the structure of the excreted compound was analyzed up to 4 months after surgery. After removal of the **cancer**, the percent amounts of the nonsulfated disaccharide tend to approach the values found for the chondroitin sulfate of healthy subjects. A significant ($P < 0.0001$) change in the ratio of urinary chondroitin sulfate and heparan sulfate and a decrease in the electrophoretic migration of chondroitin sulfate were also observed. All of the patients with head and neck **cancer** analyzed so far have shown this structural anomaly of urinary chondroitin sulfate. This assay may be useful in the diagnosis and follow-up of **cancer** therapy.
AN 2000:107645 BIOSIS
DN PREV200000107645
TI Patients with head and neck tumors excrete a chondroitin sulfate with a low degree of sulfation: A new tool for diagnosis and follow-up of cancer therapy.
AU Martins, Joao R. M. (1); Gadelha, Maria E. C.; Fonseca, Sonia M.; Sampaio, Lucia O.; De L. Pontes, Paulo A.; Dietrich, Carl P.; Nader, Helena B.
CS (1) Universidade Federal de Sao Paulo, Escola Paulista de Medicina, Rua 3 de Maio 100, 4th andar, CEP 04044-020, Sao Paulo, SP Brazil
SO Otolaryngology - Head and Neck Surgery, (Jan., 2000) Vol. 122, No. 1, pp. 115-118.
ISSN: 0194-5998.
DT Article
LA English
SL English

L5 ANSWER 8 OF 42 CA COPYRIGHT 2003 ACS
AB A novel midkine-binding protein is purifd. from a brain ext. prepd. from a 13.5-day wild type ICR mouse embryo by immunopptn. using an antibody to midkine. The protein is localized on the cell surface membrane and is

able to bind to midkine and heparin-binding midkine. The protein is insensitive to heparinase I.apprx.III, keratanase, or **chondroitinase**. Antibodies to receptor-type phosphotyrosine phosphatase .xi. do not recognize the protein. This protein is useful in screening candidate compds. for drugs such as remedies for **cancer** . Methods for cloning the protein-encoding cDNA sequence are also claimed (not sequences given).

AN 131:125924 CA
TI Novel midkine-binding protein from ICR mice
IN Muramatsu, Takashi; Kadomatsu, Kenji; Ikematsu, Shinya; Sakuma, Sadatoshi
PA Meiji Milk Products Co., Ltd., Japan
SO PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9938971	A1	19990805	WO 1999-JP423	19990202
	W: AU, CA, CN, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9920765	A1	19990816	AU 1999-20765	19990202
PRAI	JP 1998-35518		19980202		
	WO 1999-JP423		19990202		

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 5
AB Previous in vitro studies have shown CD44 isoforms contg. the alternatively spliced exon v3 (CD44v3) to be modified with heparan sulfate (HS) and to bind HS-binding basic fibroblast growth factor (bFGF). Here, we demonstrate that exogenously added bFGF is also bound in vivo by CD44v3-pos. keratinocytes in normal skin and by tumor cells in basal cell carcinoma and squamous cell carcinoma (SCC), two skin **cancers** of keratinocyte origin. BFGF binding and CD44v3 expression were colocalized in cultured human normal keratinocytes (HNK) and on the SCC cell line A431. By contrast, benign or malignant tumors of melanocyte origin failed to express CD44v3 and bound no bFGF. The bFGF binding to normal or transformed keratinocytes in vivo and in vitro was dependent on HS modification, as it was completely eliminated by pretreatment with heparitinase or by blocking with free heparin, whereas **chondroitinase** had no effect. In addn., specific removal of CD44v3 by antibody-induced shedding also diminished bFGF binding to keratinocytes. Furthermore, bFGF stimulated the proliferation of CD44v3-pos. HNK and A431 in a dose-dependent fashion. This bFGF effect was again completely abolished by heparitinase or free heparin, but not by **chondroitinase**. In aggregate, these results suggest that a function of HS-modified CD44 isoforms such as CD44v3 in skin is to present the HS-binding growth factor bFGF, thereby stimulating the proliferation of normal or transformed keratinocytes.
AN 132:306445 CA
TI Colocalization of basic fibroblast growth factor and CD44 isoforms containing the variably spliced exon v3 (CD44v3) in normal skin and in epidermal skin cancers
AU Grimme, H. U.; Termeer, C. C.; Bennett, K. L.; Weiss, J. M.; Schopf, E.; Aruffo, A.; Simon, J. C.
CS Department of Dermatology, University of Freiburg, Freiburg, D-79104, Germany
SO British Journal of Dermatology (1999), 141(5), 824-832
CODEN: BJDEAZ; ISSN: 0007-0963
PB Blackwell Science Ltd.
DT Journal
LA English

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 42 CA COPYRIGHT 2003 ACS

AB A method for the treatment of cancer is disclosed which is capable of directing supralethal doses of radiation, called Hot-Spots, virtually exclusively to the cancer. The present invention involves a multi-step therapy process and includes a class of novel chem. agents. In accordance with the invention, it was discovered that sol. precipitable materials can be made to accumulate as non-digestible ppts. in targeted cells as a result of enzyme action within the targeted cells. Accumulation is achieved by administering to the living host a sol. binary reagent made by attaching a targeting agent to a novel chem. agent which is a sol. precipitable material. The binary reagent binds to antigenic receptors on targeted cells which endocytose binary reagent and transport it into the lysosomes where enzymes detach the sol. precipitable material from the targeting agent, causing it to ppt., accumulate, and be retained in the cells. Increasing amts. of ppt. can be made to accumulate in cells by continuing the administration of the binary reagent. The accumulated ppt. is relocated to the extra-cellular fluid by selectively killing a fraction of cancer cells. Now relocated in the extra-cellular fluid of the cancer, the ppt. is used as a "platform" from which to generate Hot-Spots. A bispecific reagent with a non-mammalian enzyme moiety is made to bind to the ppt. A sol. radioactive material is administered which is converted by the enzyme moiety of the bound bispecific reagent into a new form which is retained adjacent to the ppt. for an extended period of time, thereby generating Hot-Spots which non-selectively kill all cells adjacent to the ppt. in the extra-cellular fluid of the cancer.

AN 129:133126 CA

TI A method and composition for cancer treatment by enzymic conversion of soluble radioactive toxic agents

IN Rose, Samuel

PA Rose, Samuel, USA

SO PCT Int. Appl., 161 pp.
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9830247	A1	19980716	WO 1998-US511	19980113
	W: AU, CA, JP, KR, NO, NZ				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6080383	A	20000627	US 1997-782219	19970113
	AU 9859131	A1	19980803	AU 1998-59131	19980113
	EP 1047456	A1	20001102	EP 1998-902485	19980113
	R: CH, DE, FR, GB, IT, LI, NL, SE				
	JP 2001524941	T2	20011204	JP 1998-531191	19980113
	US 2002022003	A1	20020221	US 1999-314422	19990518
	US 6468503	B2	20021022		
	US 2003068382	A1	20030410	US 2002-226288	20020822
PRAI	US 1997-782219	A	19970113		
	WO 1998-US511	W	19980113		
	US 1999-314422	A3	19990518		

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 11 OF 42 CA COPYRIGHT 2003 ACS

AB 1St ligands and 2nd ligands in a sample are detd. by contacting the sample with a solid phase on which both of 1st receptors and 2nd receptor-1st ligand-1st receptor complexes are immobilized, and detecting formation of the complexes between the 1st receptors and the 1st ligands and that between the 2nd receptors and the 2nd ligands, e.g. using labeled 1st receptors and labeled 2nd receptors, resp. The kits comprise the solid

phase, the labeled 1st receptors, and the labeled 2nd receptors. Detn. of keratan sulfate (I) and hyaluronic acid (II) by the method is useful for primary screening of osteoarthritis, rheumatoid arthritis, corneal disease, **cancer**, Morquio's syndrome, Hurler's syndrome, etc. Simultaneous detn. of I and II using a multiwell plate in which each well was successively treated with anti-keratan sulfate antibodies and **chondroitinase** ABC-hydrolyzed bovine nose cartilage-derived proteoglycans, biotinylated anti-keratan sulfate antibodies, and biotinylated hyaluronic acid-binding proteins.

AN 129:51706 CA

TI Method, solid phase, and kits for simultaneous determination of two kinds of ligands

IN Okamura, Kazuo; Yoshida, Hiroko

PA Seikagaku Kogyo Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10153600	A2	19980609	JP 1996-311738	19961122
PRAI	JP 1996-311738		19961122		

L5 ANSWER 12 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 6

AB The authors previously demonstrated that lactoferrin increases breast cell sensitivity to natural killer cell cytotoxicity whereas hematopoietic cells are unaffected by lactoferrin. It has been described that lactoferrin binds to various glycosaminoglycans. Compared to hematopoietic cells, breast **cancer** cells and particularly the breast cell line MDA-MB-231, possess a high level of proteoglycans. Scatchard anal. of 125I-lactoferrin binding to MDA-MB-231 cells revealed the presence of two classes of binding sites: a low affinity site with a Kd of about 700 nM and 3.9 .times. 106 sites and a higher affinity class with a Kd of 45 nM and 2.9 .times. 105 sites per cell. To investigate the potential regulation of lactoferrin activity by proteoglycans expressed on the MDA-MB-231 cells, the authors treated these cells with glycosaminoglycan-degrading enzymes or sodium chlorate, a metabolic inhibitor of proteoglycan sulfation. The authors showed that **chondroitinase** treatment has no effect, while heparinase or chlorate treatment significantly reduces both the binding of lactoferrin to cell surface sulfated mols. such as heparan sulfate proteoglycans (HSPG) and the affinity of lactoferrin for the higher affinity binding sites. The modulation of the lactoferrin binding was correlated with a decrease in lactoferrin activities on both MDA-MB-231 cell sensitization to lysis and proliferation. Taken together, these results suggest that the presence of adequately sulfated mols., in particular HSPG, is important for lactoferrin interaction and activity on the breast **cancer** cells MDA-MB-231.

AN 130:108457 CA

TI Role of heparan sulfate proteoglycans in the regulation of human lactoferrin binding and activity in the MDA-MB-231 breast cancer cell line

AU Damiens, Eve; El Yazidi, Ikram; Mazurier, Joel; Elass-Rochard, Elisabeth; Duthille, Isabelle; Spik, Genevieve; Boilly-Marer, Yolande

CS Lab. Chimie Biologique, Univ. Sciences Technologies Lille, Villeneuve d'Ascq, F-59655, Fr.

SO European Journal of Cell Biology (1998), 77(4), 344-351
CODEN: EJCBDN; ISSN: 0171-9335

PB Gustav Fischer Verlag

DT Journal

LA English

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 13 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 7

AB Gene therapy may be an important adjuvant for treating **cancer** in the pleural space. The initial results of retroviral gene transfer to **cancer** cells in malignant pleural effusions revealed that transduction was markedly inhibited, and studies to characterize the inhibitory factor(s) were performed. The inhibition was contained within the sol., rather than cellular, components of the effusions and was demonstrated with amphotropic gibbon ape leukemia virus, and vesicular stomatitis virus-glycoprotein pseudotyped retroviral vectors. After excluding complement proteins, a series of studies identified chondroitin sulfates (CSs) as the inhibitory substances. First, treatment of the effusions with mammalian hyaluronidase or **chondroitinases**, but not Streptomyces hyaluronidase, abolished the inhibitory activity. Second, addn. of exogenous CS glycosaminoglycans mimicked the inhibition obsd. with pleural effusions. Third, immunoassays and biochem. analyses of malignant pleural effusion specimens revealed CS in relevant concns. within pleural fluid. Fourth, proteoglycans/glycosaminoglycans isolated from the effusions inhibited retroviral gene transfer. Analyses of the mechanism of inhibition indicate that the chondroitin sulfates interact with vector in soln. rather than at the target cell surface. These results suggest that drainage of the malignant pleural effusion, and perhaps enzymic pretreatment of the pleural cavity, will be necessary for efficient retroviral vector mediated gene delivery to pleural metastases.

AN 127:366 CA

TI Retroviral gene transfer is inhibited by chondroitin sulfate proteoglycans/glycosaminoglycans in malignant pleural effusions

AU Batra, Raj K.; Olsen, John C.; Hoganson, Diana K.; Caterson, Bruce; Boucher, Richard C.

CS Div. Pulmonary Diseases, Dep. Med., Univ. North Carolina, Chapel Hill, NC, 27599-7248, USA

SO Journal of Biological Chemistry (1997), 272(18), 11736-11743
CODEN: JBCHA3; ISSN: 0021-9258

PB American Society for Biochemistry and Molecular Biology

DT Journal

LA English

L5 ANSWER 14 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 8

AB Heparin/heparan sulfate interacting protein (HIP) is a recently identified protein expressed by many normal epithelia and epithelial cell lines. In the present study, the authors examd. expression and potential functions of this protein in a series of human breast **cancer** cells and in sections of normal and malignant human breast tissue. Four of the five breast **cancer** cell lines studied (MCF-7, T-47D, MDA-MB-468, and BT-549) expressed HIP protein and mRNA at similar levels. In contrast, MDA-MB-231 cells failed to display reactivity with HIP-specific probes in any assay. Cell aggregation assays and cell surface antibody binding studies demonstrated that HIP was expressed on the cell surface. However, HIP expression did not correlate with the no. of cell surface [3H]heparin (HP) binding sites. The KDapps for cell surface HP binding sites were similar in all breast **cancer** cell lines studied and ranged from 112 to 298 nM. In contrast, cell surface HP binding capacity varied greatly, ranging from 2.3 .times. 105 (MDA-MB-231 and MDA-MB-468) to 99 .times. 105 sites/cell (BT-549). All cell lines tested displayed the ability to bind to a heparan sulfate (HS)-binding synthetic peptide motif of HIP in a HP-inhibitable fashion. Binding to this motif was not inhibited by other glycosaminoglycans including hyaluronic acid, chondroitin sulfates, or keratan sulfate. Furthermore, cell binding to HIP peptide was almost completely lost when intact cells were predigested with heparinases but not **chondroitinases**. Cell surface HS from breast **cancer** cells as well as normal human breast epithelia bound to HIP peptide in a HP-inhibitable fashion, demonstrating the ability of these cell surface components to directly interact. HIP was detected in both normal breast epithelia and breast tumors in situ. It is suggested that HIP mediates aspects of HS-dependent interactions of both

normal and malignant breast epithelia with other cells and extracellular matrix components.

AN 128:46572 CA

TI Heparin/heparan sulfate interacting protein expression and functions in human breast cancer cells and normal breast epithelia

AU Jacobs, Andrew L.; Julian, Joanne; Sahin, Aysegula A.; Carson, Daniel D.

CS Departments of Biochemistry and Molecular Biology, The University of Texas M. D. Anderson Cancer Center, Houston, TX, 77030, USA

SO Cancer Research (1997), 57(22), 5148-5154
CODEN: CNREA8; ISSN: 0008-5472

PB American Association for Cancer Research

DT Journal

LA English

L5 ANSWER 15 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AB Immunohistochemical expression of standard and v6 isoforms of CD44 was performed on specimens from three groups of prostate **cancer** patients: Group I, primary prostate **cancers** (N=31); Group II, lymph node metastases (N=18); and Group III, bone metastases (N=15). In addition, serum from all Group I patients was analyzed for soluble CD44 expression. Benign glands exhibited strong CD44s and CD44v6 expression in basal cells. Weak basolateral staining was identified in superficial luminal cells. Malignant glands and metastatic tumors revealed diminished or absent expression of both CD44s and CD44v6 with a heterogeneous pattern, Pretreatment with **chondroitinase** did not significantly alter CD44 expression. Soluble CD44 was present in all serum samples, however, expression was variable. There was no statistically significant correlation between immunohistochemical CD44 expression, soluble CD44 expression, and clinical progression.

AN 1997:261136 BIOSIS

DN PREV199799567739

TI Immunohistochemical and soluble expression of CD44 in primary and metastatic human prostate cancers.

AU Griebling, Tomas L.; Palechek, Patricia L.; Cohen, Michael B. (1)

CS (1) Dep. Pathol., Univ. Iowa, 200 Hawkins Drive, 5216 RCP, Iowa City, IA 52242 USA

SO International Journal of Oncology, (1997) Vol. 10, No. 4, pp. 697-702. ISSN: 1019-6439.

DT Article

LA English

L5 ANSWER 16 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 9

AB Thrombospondin is an adhesive glycoprotein that promotes breast **cancer** cell adhesion to human vascular endothelial cells. In this study, we have identified the mol. domains of thrombospondin that mediate its binding to specific receptors on the human breast adenocarcinoma cell line, MDA-MB-231. Two recombinant fragments from the amino-terminus (TSPN18 and TSPN28), and the fusion proteins of the type 1 and type 2 repeats of human thrombospondin, inhibited binding of radiolabeled thrombospondin to MDA-MB-231 cells in suspension by 40-60% at 50 .mu.g/mL whereas the type 3 repeat, carboxy-terminus and unfused glutathione-S-transferase as well as the synthetic peptide Gly-Arg-Gly-Asp-Ser (500 .mu.g/mL) had little or no effect. Heparin are various glycosaminoglycans as heparan sulfate, chondroitin sulfates A, B or C, and fucoidan inhibited thrombospondin binding to MDA-MB-231 cells by more than 60% whereas dextran sulfate had only little effect. Treatment of cells with heparitinase, **chondroitinase** ABC, and hyaluronidase, but not with neuraminidase, induced 30-50% inhibition of thrombospondin binding suggesting the participation of both heparan sulfate and chondroitin sulfate cell surface-assocd. mols. Inhibition of proteoglycan sulfation by chlorate or inhibition of glycosaminoglycan chain formation by two .beta.-D-xylosides also led to a substantial inhibition of thrombospondin binding. Our results indicate that several domains within the thrombospondin mol., namely the amino-terminus, type 1

and type 2 repeats, participate in its binding to specific receptors bearing sulfated glycosaminoglycans on MDA-MB-231 cells. Biol. assays have indicated that, in addn. to these domains, the peptide Gly-Arg-Gly-Asp-Ser inhibited MDA-MB-231 cell attachment to thrombospondin suggesting that the last type 3 repeat of the mol. may also contribute to its cell adhesive activity.

AN 125:272226 CA
TI Heparin-binding domain, type 1 and type 2 repeats of thrombospondin mediate its interaction with human breast cancer cells
AU Incardona, Francesca; Lawler, Jack; Cataldo, Didier; Panet, Amos; Legrand, Yves; Foidart, Jean Michel; Legrand, Chantal
CS Hop. Saint Louis, Paris, 75010, Fr.
SO Journal of Cellular Biochemistry (1996), 62(4), 431-442
CODEN: JCEBD5; ISSN: 0730-2312
PB Wiley-Liss
DT Journal
LA English

L5 ANSWER 17 OF 42 CA COPYRIGHT 2003 ACS
AB A review with 17 refs. Zymog. for detecting **chondroitinase** and hyaluronidase was developed using chondroitin sulfate-immobilized acrylamide gel. For human serum two band were detected in hyaluronic acid zymog., but one of them was neg. in chondroitin sulfate zymog. Chondroitin sulfate zymog. of ext. from human womb **cancer** cells revealed a new hyaluronidase of 94 kDa which was specific for hyaluronic acid. Antibody to the enzyme makes possible to clone a responsible gene and to show a dynamic mechanism for degrading glycosaminoglycan chains.

AN 125:28705 CA
TI Glycosaminoglycan-degrading enzymes as revealed by zymography
AU Yamagata, Tatsuya
CS Fac. Biosci. Biotechnol., Tokyo Inst. Technol., Yokohama, 226, Japan
SO Igaku no Ayumi (1996), 177(1), 36-41
CODEN: IGAYAY; ISSN: 0039-2359
PB Ishiyaku
DT Journal; General Review
LA Japanese

L5 ANSWER 18 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 10
AB The purpose of this study was to det. the biochem. and mol. characteristics of mucin synthesized by cystic fibrosis cells (CFPAC-1), a pancreatic **cancer** cell line derived from a patient with cystic fibrosis, and pancreatic **cancer** (SW-1990) cell lines. High mol. wt. glycoproteins (HMG) were quantified by [3H]-glucosamine labeling and chromatog. on Sepharose CL-4B. Mucin gene expression was detd. by using cDNA probes for 2 distinct intestinal mucins (MUC2 and MUC3) and one stomach mucin (MUC1). The specific mucin core epitopes were confirmed by immunoblots using antibodies that recognize T, Tn, sialosyl Tn, MUC1, and MUC3. The results of these expts. demonstrate that CFPAC-1 cells contained 1.25 fold and 1.4 fold more HMG in the membrane and cytosolic fractions, and secreted 4-fold more HMG into the medium compared to SW-1990 cells. The HMG of SW-1990 was mucinous in nature and not proteoglycans, as it was not susceptible to hyaluronidase, heparinase and **chondroitinase** ABC. The HMG of CFPAC-1 was also predominantly (80%) mucinous but with small amts. of proteoglycans. The mRNA and immunoblot anal. suggest that these CFPAC-1 and SW-1990 cells predominantly express MUC1 apomucin, small amts. of MUC2 apomucin, and no MUC3. Pulse chase labeling and immunopptn. of MUC1 type mucin using the 139H2 monoclonal antibody demonstrated that different sizes of mucin gene product were present in both cell lines, corresponding to the known length polymorphism of this mucin. Both T and Tn antigens were significantly higher in CFPAC-1 and SW-1990 cells as compared to sialosyl Tn antigen. These findings were assocd. with the increased activities of polypeptidyl N-acetylgalactosaminyltransferase and .beta.1,3-galactosyltransferase. These investigations demonstrate for the first time that cystic fibrosis

cells (CFPAC-1) secrete and synthesize high amts. of mucin which is assocd. with high levels of MUC1 mRNA, low levels of MUC2 mRNA and nondetectable MUC3 mRNA.

AN 122:262936 CA

TI Cystic fibrosis and pancreatic cancer cells synthesize and secrete MUC1 type mucin gene product

AU Dahiya, Rajvir; Kwak, Kyu-Shik; Ho, Samuel B.; Yoon, Wan-Hee; Kim, Young S.

CS Dep. Med., Univ. California, San Francisco, CA, USA

SO Biochemistry and Molecular Biology International (1995), 35(2), 351-62
CODEN: BMBIES; ISSN: 1039-9712

PB Academic

DT Journal

LA English

L5 ANSWER 19 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 11

AB The authors investigated changes in the glycosaminoglycans (GAGs) during progression of a human gingival carcinoma xenograft line, GK-1, in nude mice. The GAGs extd. from **cancers** 3, 5, 7, 10 and 15 wk after transplantation consisted of hyaluronic acid (HA), chondroitin sulfate (CS) and heparan sulfate (HS) as major components, and dermatan sulfate (DS) as a trace component for all **cancers**. HPLC anal. revealed that the HA content per defatted tissue dry wt. increased in the **cancers** 5 wk after transplantation compared to those of 3 wk, while CS for **cancers** at 10 wk decreased compared with 7 wk. However, HS showed no significant change. Both the CS and DS contained primarily 4-sulfated disaccharide units. Immunohistochem. staining with antibody 2-B-6 for the PGs having .DELTA.Di-4S produced by **chondroitinase** ABC digestion showed that CS is located in the tissue surrounding the **cancer** nests and mass. These results indicate that the location of accumulation of CS, which primarily contains 4-sulfated disaccharide units, plays an important role in **cancer** progression.

AN 125:111600 CA

TI Changes in glycosaminoglycan characteristics during progression of a human gingival carcinoma xenograft line in nude mice

AU Ida, Masayasu; Kamada, Aiko

CS Department Biochemistry, Osaka Dental University, Osaka, 540, Japan

SO Journal of Osaka Dental University (1995), 29(2), 39-50
CODEN: JODUA2; ISSN: 0475-2058

PB Osaka Dental University

DT Journal

LA English

L5 ANSWER 20 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 12

AB Previous studies have suggested that mucin gene expression is tissue-specific; however, the relationship between unique mucin gene products and the biochem. properties of mucins is unknown. The purpose of this study was to det. the biochem. and mol. characteristics of mucin synthesized by adenocarcinoma cell lines derived from breast (ZR-75-1), stomach (MGC-803), pancreas (Capan-2), and lung (Chago K-1). Mucin was quantitated by [3H]glucosamine labeling and Sepharose CL-4B chromatog. The mucinous nature of the labeled high mol. wt. glycoproteins (HMG) was verified by alk. borohydride treatment, cesium chloride d. gradient ultracentrifugation, and sodium dodecyl sulfate-polyacrylamide gel electrophoresis. Specific mucin gene expression was detd. using cDNA probes for 2 distinct intestinal mucins (MUC-2 and MUC-3) and one breast **cancer** mucin (MUC-1). Specific core mucin proteins were confirmed by immunoblots using antibodies that recognize MUC-1, MUC-2, and MUC-3 core peptides. These expts. demonstrate that all cell lines contained HMG in the medium, cytosol, and membrane fractions. The HMG was mucinous in breast, pancreatic, and lung cell lines. In contrast, most of the HMG secreted by the gastric cell line was proteoglycan-like, due to its susceptibility to hyaluronidase, heparinase, and **chondroitinase**

avidin-biotin complex. Ion-exchange (DEAE-Sephacel) chromatog. of [3H]glucosamine-labeled HMG demonstrated that the acidic or basic nature of the mucin was different in all **cancer** cell lines tested. Despite these differences, mRNA and immunoblot anal. suggest that all cell lines predominantly express MUC-1 apomucin, small amts. of MUC-2 apomucin, and no MUC-3. Immunopptn. of MUC-1-type mucin using the 139H2 monoclonal antibody demonstrated that different sizes of mucin peptides were present in all cell lines, corresponding to the known length polymorphism of this mucin. The amt. and nature of carbohydrate epitopes were analyzed by immunoblots using anti-T (peanut lectin), anti-Tn (91S8 monoclonal antibody), and antisialosyl Tn (JT10e monoclonal antibody). T and Tn antigens were significantly higher in breast and pancreatic cells as compared with lung and gastric cell lines. These findings correlated with increased activities of polypeptidyl N-acetylgalactosaminyl transferase and .beta.-1,3-galactosyltransferase. These expts. demonstrate that in contrast to colon **cancer** cell lines described previously, which expressed high levels of MUC-2 and MUC-3 mRNA, the mucin synthesized by breast, pancreatic, gastric, and lung cell lines is assocd. with high levels of MUC-1 mRNA, low levels of MUC-2 mRNA, and an absence of MUC-3 mRNA. However, the mucin in these cells differs greatly in amt., distribution, and biochem. and immunol. properties.

AN 119:46467 CA
TI Mucin synthesis and secretion in various human epithelial cancer cell lines that express the MUC-1 mucin gene
AU Dahiya, Rajvir; Kwak, Kyu Shik; Byrd, James C.; Ho, Samuel; Yoon, Wan Hee; Kim, Young S.
CS Dep. Med., Univ. California, San Francisco, CA, USA
SO Cancer Research (1993), 53(6), 1437-43
CODEN: CNREA8; ISSN: 0008-5472
DT Journal
LA English

L5 ANSWER 21 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 13
AB Background: Chondroitin sulfate is significantly increased in tumors (10 to 100 times) when compared to the amounts present in normal adjacent tissues. To investigate if the changes in concentration of chondroitin sulfate could be reflected in the urine of **cancer** patients we have analyzed the chondroitin sulfate excreted by 44 patients with different types of tumors, 50 normal individuals and 15 patients with unrelated diseases. Experimental Design: The identification and structural analyses of the sulfated glycosaminoglycans were made by electrophoresis and degradation with specific enzymes (**chondroitinases** AC and ABC), identification/quantitation of their disaccharide products by chromatography (paper AC and ABC), identification/quantitation of their disaccharide products by chromatography (paper and HPLC) and chemical determinations. Results: The disaccharide products formed from chondroitin sulfate of the 44 **cancer** patients by action of **chondroitinase** ABC show a substantial relative increase of non sulfated disaccharide (32.1% +- 15.2) with a relative decrease of 6-sulfated disaccharide (28.9% +- 11.5) and 4-sulfated disaccharide (39.0% +- 13.5) when compared to the chondroitin sulfate of normal subjects (9.1% +- 2.2, 40.6% +- 4.5 and 50.2% +- 4.5, respectively) or from patients with unrelated diseases. There is a direct correlation between the non sulfated disaccharide content and the stage of malignancy of the **cancer** patients. A significant change of the ratio of chondroitin sulfate and heparan sulfate and a decrease in the electrophoretic migration of chondroitin sulfate were also observed in **cancer** patients. Conclusions: All the **cancer** patients analyzed so far have shown the structural anomaly of the urinary chondroitin sulfate and this may be useful in the diagnosis and follow up of **cancer** therapy.
AN 1993:345165 BIOSIS
DN PREV199396042165
TI Anomalous structure of urinary chondroitin sulfate from cancer patients: A

potential new marker for diagnosis of neoplasias.
AU Dietrich, Carl P. (1); Martins, Joao R. M.; Sampaio, Lucia O.; Nader, Helena B.
CS (1) Dep. de Bioquimica, Escola Paulista de Medicina, Rua 3 de Maio 100, 4 Andar, C.P. 20372, CEP 04044 Sao Paulo, SP Brazil
SO Laboratory Investigation, (1993) Vol. 68, No. 4, pp. 439-445. ISSN: 0023-6837.
DT Article
LA English

L5 ANSWER 22 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 14
AB The synthesis and secretion of mucin-like high-mol. glycoprotein was studied in 2 human colon **cancer** cell lines that spontaneously differentiate in culture (Caco-2 and T84) and in 2 cell lines that do not spontaneously differentiate (LS174T and HT29). Mucin, quantitated by 3H-glucosamine labeling and chromatog. on Sepharose CL-4B, was produced by all 4 cell lines. The mucinous nature of the labeled high-mol. glycoprotein was verified by enzymic degrdn. treatments (heparinase, hyaluronidase, **chondroitinase** ABC, and N-glycanase), alk.-borohydride treatment, inhibition of labeling by the glycosylation inhibitor benzyl-.alpha.-GalNAc, and by CsCl-d.-gradient centrifugation. In all 4 cell lines, an inverse correlation of mucin synthesis with cell d. was demonstrated. In Caco-2 cells, the spontaneous post-confluent enterocytic differentiation with increased brush-border enzyme expression was assocd. with a decrease in mucin synthesis and in the activities of polypeptidyl GalNAc transferase and .beta.1,3-galactosyltransferase activity. Using cDNA probes for 2 distinct human intestinal mucins (MUC2 and MUC3), all 4 colon **cancer** cell lines expressed mucin message, but the types of mucin mRNA expressed differed. Thus, mucin-like glycoproteins can be synthesized by cell lines derived from non-mucinous colon **cancer**, whether or not they undergo spontaneous differentiation in culture. These cell lines may serve as in vitro models for studying apomucin heterogeneity and control of mucin gene expression.
AN 116:171016 CA
TI Mucin synthesis and secretion in relation to spontaneous differentiation of colon cancer cells in vitro
AU Niv, Yaron; Byrd, James C.; Ho, Samuel B.; Dahiya, Rajvir; Kim, Young S.
CS Gastrointest. Res. Lab., VA Med. Cent., San Francisco, CA, 94121, USA
SO International Journal of Cancer (1992), 50(1), 147-52 CODEN: IJCNAW; ISSN: 0020-7136
DT Journal
LA English

L5 ANSWER 23 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 15
AB The biochem. compn. of proteoglycans was investigated in human breast tissues of different age either with invasive mammary carcinoma or with benign lesions of the breast. Proteoglycans were extd. from tissues under dissociative conditions (4M guanidine-HCl), isolated by CsCl gradient ultracentrifugation, and purified by gel exclusion and ion exchange chromatog. Glycosaminoglycan side chain compns. of proteoglycans were evaluated by enzymic anal. (**chondroitinases** ABC and AC) and nitrous acid degrdn. Biochem. data indicated that proteoglycans of high d. and mol. size were increased (per wet wt. of tissue) in neoplastic compared to nonneoplastic tissues. Overall proteoglycan content was increased almost 2-fold in tumors. Furthermore, enzymic data revealed a change in the proportions of glycosaminoglycan chains in neoplastic and nonneoplastic tissues. In particular, an increase in chondroitin sulfate (63%) vs. 35%, resp.) together with a decrease of dermatan sulfate (12% vs. 45%, resp.) characterized tumors in comparison to mammary tissues with benign lesions, while the relative content of heparan sulfate side chains remained similar in both tissues. However, morphometric analyses revealed that heparan sulfate content per epithelial cell vol. was in fact decreased in neoplastic tissue. These differences in proteoglycans indicate that there are significant changes in the extracellular matrix

and surface properties of cells in breast **cancer** tissue.
AN 114:140763 CA
TI Partial characterization of proteoglycans isolated from neoplastic and nonneoplastic human breast tissues
AU Alini, Mauro; Losa, Gabriele A.
CS Lab. Patol. Cell., Ist. Contonale Patol., Locarno, 6604, Switz.
SO Cancer Research (1991), 51(5), 1443-47
CODEN: CNREA8; ISSN: 0008-5472
DT Journal
LA English

L5 ANSWER 24 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 16
AB The isolation and partial characterization of a novel anticoagulant from the plasma of a patient with metastatic prostate **cancer** is described. The patient had a prolonged activated partial thromboplastic time, prothrombin time and thrombin time which did not correct by mixing with normal plasma. The reptilase time was normal and the prolonged thrombin time was corrected with protamine sulfate suggesting a heparin-like anticoagulant. A glycosaminoglycan anticoagulant (GAC) was isolated from the patient's plasma. The inhibitory activity of the GAC was destroyed by treatment with **chondroitinase** ABC. The GAC migrated on agarose gel electrophoresis between keratin sulfate and heparan sulfate. Purified GAC possessed only 2% (W/W) of the antithrombin III cofactor activity of porcine heparin. In assays using purified fibrinogen, the GAC was shown to directly inhibit fibrinogen proteolysis by thrombin. It is concluded that this glycosaminoglycan anticoagulant directly inhibits thrombin clotting of fibrinogen and is a new mechanism for abnormal hemostatic assays in **cancer**.
AN 1991:503705 BIOSIS
DN BA92:126665
TI A GLYCOSAMINOGLYCAN INHIBITOR OF THROMBIN A NEW MECHANISM FOR ABNORMAL HEMOSTATIC ASSAYS IN CANCER.
AU LIEBMAN H A; COMENZO R; ALLEN S T; DILORIO J M
CS DIV. HEMATOL.-ONCOL., FGH-1 BUILDING, BOSTON CITY HOSP., 818 HARRISON AVE., BOSTON, MASS. 02118.
SO AM J HEMATOL, (1991) 38 (1), 24-29.
CODEN: AJHEDD. ISSN: 0361-8609.
FS BA; OLD
LA English

L5 ANSWER 25 OF 42 CA COPYRIGHT 2003 ACS
AB The presence of a small amt. of diastase-resistant periodic acid Schiff-pos. material was detected in intracytoplasmic microcysts in 2 out of 30 cases of malignant mesothelioma. The material was also stained by Alcian Blue at pH 2.5 and the stain was resistant to diastase, hyaluronidase, **chondroitinase** or sialidase treatment. It was stained by colloid iron or Mucicarmine, but not by high iron diamine or Alcian Blue at pH 1.0. Metachromasia with toluidine blue was demonstrated at pH 4.4, but not at pH 2.5. Ultrastructurally, the material appeared to be as electron-dense mesh-like structures. These results suggest that although the presence of such a material is often used as a neg. evidence when one excludes malignant mesothelioma from glandular **cancers** as diagnosis, one should not overestimate its wt.
AN 114:243688 CA
TI Diastase-resistant periodic acid Schiff-positive materials in malignant mesotheliomas
AU Kobuke, Toshihiro; Yonehara, Shuji; Inai, Kouki; Tokuoka, Shoji; Fukuhara, Toshiyuki; Egawa, Hiromi; Hayashi, Yuzo
CS Sch. Med., Hiroshima Univ., Hiroshima, Japan
SO Byori to Rinsho (1990), 8(6), 801-7
CODEN: BYRIEM; ISSN: 0287-3745
DT Journal
LA Japanese

L5 ANSWER 26 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 17

AB Colon **cancer** cells in culture synthesize and secrete mucin glycoproteins, which carry a number of **cancer**-associated antigens. However, the structures and mechanisms of biosynthetic processing are not well understood. Mucins synthesized and secreted by LS174T human colon **cancer** cells were compared to those in LS174T xenografts in athymic mice. Mucins radiolabeled with glucosamine or sulfate were purified by gel filtration and cesium chloride density gradient centrifugation. The mucins were of high molecular weight and were resistant to **chondroitinase** ABC, hyaluronidase and HNO2 treatment. They were, however, susceptible to pronase digestion and mild alkaline treatment. Using radiochemical precursors, the cellular mucin was shown to contain fucose, galactose, N-acetylgalactosamine, N-acetylglucosamine, N-acetylneuraminic acid, and sulfate. Oligosaccharides released by .beta.-elimination had N-acetylgalactosaminitol as the reduced amino sugar and also unreduced galactosamine, indicating that there is N-acetylgalactosamine O-glycosidically attached to protein core and also peripheral N-acetylgalactosamine not directly linked to protein. DEAE-cellulose chromatography of mucins showed two major peaks with both intracellular and secreted mucins, but xenograft mucins also had more acidic components. Sulfate-labeled mucins were shifted to less acidic peaks by neuraminidase digestion, which indicates that the same mucin molecules are both sialylated and sulfated. We conclude that the intracellular mucins of cultured colon **cancer** cells, those secreted into the medium, and those in nude mouse xenografts are chemically similar, but differ in sialic acid and sulfate content. This experimental model system, LS174T cells maintained in culture and as nude mouse xenografts, may be useful for further biosynthetic and structural studies of colon **cancer** mucin.

AN 1989:359215 BIOSIS

DN BA88:51329

TI COMPARISON OF METABOLICALLY LABELED MUCINS OF LS174T HUMAN COLON CANCER CELLS IN TISSUE CULTURE AND XENOGRAFT.

AU SIDDIQUI B; BYRD J C; FEARNEY F J; KIM Y S

CS GI RES. LAB., 151M2, VETERANS ADM. MED. CENTER, 4150 CLEMENT STREET, SAN FRANCISCO, CALIF. 94121.

SO TUMOR BIOL, (1989) 10 (2), 83-94.
CODEN: TUMBEA.

FS BA; OLD

LA English

L5 ANSWER 27 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 18

AB Immunohistochem. localization and distribution of proteoglycans (PG) were obsd. in non-neoplastic and neoplastic tissues. Chondroitin 6-sulfate PG, revealed with antibody 3B3 after **chondroitinase** ABC treatment, localized in the artery walls, perivascular connective tissue, interstitial element of bone marrow basement membrane components of neoplastic tissues (adenoid cystic carcinoma, and breast tumor). The 3B3 was also markedly reactive with the connective tissue proliferating from blood vessels and muscle tissues in assocn. with the invasive growth of tumor cells. The interstitial elements, so-called specific stroma within the **cancer** cell nests contained chondroitin 4-sulfate PGs and large PG, whereas the surrounding connective tissue and the preexisting fibrous connective tissue involved in the tumor growth consisted of dermatan sulfate PG with a considerable amt. of chondroitin 4-sulfate PG. Dermatan sulfate PG could be detected by antibody 9A2-staining after chondroitin B-lyase treatment.

AN 114:59753 CA
Correction of: 113:188983

TI Immunohistochemical localization of proteoglycans of human non-neoplastic and neoplastic tissues

AU Takeuchi, Jun; Fukatsu, Toshiaki; Nagasaka, Tetsuro; Nakashima, Nobuo; Ogura, Takeshi; Katoh, Takeshi; Yoshida, Keiichi
CS Sch. Med., Nagoya Univ., Nagoya, Japan
SO Connective Tissue (1989), 21(2), 35-6
CODEN: COTIE7; ISSN: 0916-572X
DT Journal
LA English

L5 ANSWER 28 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 19
AB The antigenic determinant recognized by monoclonal antibody SPan-1 is greatly elevated in sera of patients with pancreatic **cancer** but not in sera of normal individuals. This study describes the mucin-like characteristics of the SPan-1 antigen isolated from culture medium and xenografts of the human pancreatic **cancer** cell line SW-1990. YPan-1, another pancreatic **cancer** assocd. monoclonal antibody, also reacts with the SPan-1-antigen. The SPan-1/YPan-1 antigens have densities of 1.4-1.5 g/mL and elute in the void vol. of Sepharose CL-2B columns. They are resistant to degrdn. by **chondroitinase** ABC, nitrous acid, and hyaluronidase but susceptible to protease digestion and reductive .beta.-elimination. All these characteristics suggest that the SPan-1 and YPan-1 determinants are carried on mucinous antigens. Both SPan-1 and YPan-1 immunoreactivities are unaffected by boiling or by alkylation and redn. of the mucins, but they are abolished by mild periodate oxidn. or neuraminidase and are markedly decreased by wheat germ agglutinin. Thus, their antigenic determinants are composed principally of carbohydrates with sialic acid, an abs. requirement for reactivity. However, the epitope specificities of SPan-1 and YPan-1 are different since YPan-1 does not compete with SPan-1 for binding to antigen. Moreover, YPan-1 and SPan-1 can be distinguished from several other sialic acid-requiring, **cancer** assocd. antibodies such as B72.3, CSLEX-1, DU-PAN-2, OC-125, and 19-9 by either their epitope characteristics or their tissue reactivity patterns.
AN 109:126657 CA
TI Mucin-like antigens in a human pancreatic cancer cell line identified by murine monoclonal antibodies SPan-1 and YPan-1
AU Ho, Jenny J. L.; Chung, Yong Suk; Fujimoto, Yasuhisa; Bi, Ning; Ryan, Whitney; Yuan, Shi Zhen; Byrd, James C.; Kim, Young S.
CS Dep. Med., Univ. California, San Francisco, CA, 94121, USA
SO Cancer Research (1988), 48(14), 3924-31
CODEN: CNREA8; ISSN: 0008-5472
DT Journal
LA English

L5 ANSWER 29 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 20
AB The human colon **cancer** cell line Caco-2 displayed in vitro morphol. differentiation which was growth-related. This phenomenon was studied in relation to the cell surface glycosaminoglycans produced by growing (5-day, prior to differentiation) and confluent (9-day, after morphol. and functional differentiation) cultures. Neosynthesized [35S]glycosaminoglycans were purified on DEAE-cellulose; at confluency, they were bound more strongly to the column than the corresponding fractions from the growing cells. Anal. of elution data of heparan sulfate and chondroitin sulfates from growing and confluent cells indicated an increase in chain length of both glycosaminoglycans in morphol. differentiated cells. Heparan sulfate was the main 35S-labeled glycosaminoglycan of the cell surface of both 5- and 9-day cultures. Paper chromatog. of the unsatd. disaccharides obtained by **chondroitinase** digestion showed that chondroitin sulfate chains were primarily 6-sulfated in the 2 studied exts. Heparan sulfate chains were isolated as **chondroitinase**-resistant material and treated with HNO2. Anal. of N- and O-sulfate group-related radioactivity showed an increase in the amt. of 35S-label in the form of N-sulfate groups and an increase in the O-35S-sulfation pattern in heparan sulfate from morphol. differentiated cells. Thus, the structural features of both

chondroitin sulfates and heparan sulfate were different when the growing cells became morphol. differentiated.

AN 109:71286 CA
TI Biosynthesis of glycosaminoglycans in the human colonic tumor cell line Caco-2: structural changes occurring with the morphological differentiation of the cells
AU Levy, Peggy; Robert, Agnes; Picard, Jacques
CS Lab. Biochim., Fac. Med. St. Antoine, Paris, 75571, Fr.
SO Biology of the Cell (1988), 62(3), 255-64
CODEN: BCELDF; ISSN: 0248-4900
DT Journal
LA English

L5 ANSWER 30 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 21
AB Immunohistochemical localization of chondroitin sulphate and dermatan sulphate proteoglycans (PGs) was observed in 70 tumour tissues, usig monoclonal anibodies 9A-2 and 3B-3 raised against core molecules obtained from chondroitin sulphate PG by **chondroitinase** ABC-treatment. They recognize a stub of .DELTA.Di-4S and .DELTA.Di-6S binding to core protein via a linkage tetrasaccharide, respectively. The antibody 6B6 raised against dermatan sulphate PG obtained from an ovarian fibroma capsule in our laboratory was also used. The interstitial fibrous elements, so-called 'specific stroma' within the **cancer** nests contained chondroitin 4-sulphate PG as revealed with 9A-2, whereas the surrounding connective tissue and the preexisting fibrous connective tissue involved in the tumor growth consisted of dermatan sulphate PG with a considerable amount of chondroitin 4-sulphate PG. Chondroitin 6-sulphate PG as revealed with 3B-3 was located in the connective tissue proliferating from blood vessels and muscle tissue in association with the invasive growth of tumour cells. Chondroitin 6-sulphate PG was also observed in the basement membrane components of some tumours. In non-epithelial tumours (fibrogenic, chondrogenic, osteogenic and neurogenic tumours), chondroitin 4-sulphate was in fibrous portions. When collagenization and hyalinization progressed, dermatan sulphate PG was observed to increase in quantity.
AN 1988:245205 BIOSIS
DN BA85:123607
TI IMMUNOHISTOCHEMICAL LOCALIZATION OF CHONDROITIN SULFATE AND DERMATAN SULFATE PROTEOGLYCANS IN TUMOR TISSUES.
AU FUKATSU T; SOBUE M; NAGASAKA T; OHIWA N; FUKATA S; NAKASHIMA N; TAKEUCHI J
CS DIV. PATHOL., CLINICAL LAB., NAGOYA UNIV. HOSP., NAGOYA 466, JPN.
SO BR J CANCER, (1988) 57 (1), 74-78.
CODEN: BJCAAI. ISSN: 0007-0920.
FS BA; OLD
LA English

L5 ANSWER 31 OF 42 CA COPYRIGHT 2003 ACS
AB A reagent contg. monoclonal antibodies to disaccharides I (R1O, R2O, R3O, R4O = sulfate, OH), and treatment of tissue samples with **chondroitinase** and then with monoclonal antibodies to I for histochem. examn. for clin. diagnosis are disclosed. Tissues from patients with stomach **cancer** were fixed, embedded, sectioned, treated for endogenous peroxidase inactivation, treated with **chondroitinase**, treated with 1st antibody (com. PG-.DELTA.Di-OS monoclonal antibody) and then peroxidase-labeled 2nd antibody, and stained. Microscopic properties of samples were compared with those of samples from normal controls.
AN 109:166874 CA
TI Monoclonal antibody-containing reagents and their use in clinical diagnosis
IN Sofue, Mitsuko; Ogura, Taku; Yoshida, Keiichi
PA Seikagaku Kogyo Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62235565	A2	19871015	JP 1986-78284	19860407
	JP 07113642	B4	19951206		
PRAI	JP 1986-78284		19860407		

L5 ANSWER 32 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 22
AB Sulfated macromols. synthesized in tumor and mucosa tissues derived from colorectal **cancer** patients were labeled with [35S]sulfate and sepd. into two fractions on DEAE-Sephacel: the slightly acidic peak (peak I) was eluted with 0.2 M NaCl and the highly acidic peak (peak II) was eluted with 0.5 M NaCl. A total of 40 specimens, which included primary colon **cancer**, liver metastases, and normal mucosa obtained at surgery (16 patients), were examd. regarding the amt. of peak I and peak II. The amt. of peak I decreased in the order of normal mucosa > primary tumors > metastases, whereas the amt. of peak II did not change among the tissues. Peak I was mostly resistant to **chondroitinase** ABC and nitrous acid treatment under acidic conditions, whereas combined **chondroitinase**-sensitive materials and nitrous acid-sensitive materials were greater than 80% of the radioactivity in peak II. The major radioactive component of peak I migrated at a position corresponding to mol. wt. (Mr) > 300,000 by SDS-PAGE and became Mr < 40,000 after alk. borohydride treatment. The major component of peak I was likely to be a sulfated glycoprotein contg. sulfate groups on alk. labile carbohydrate chains. Peak II consisted of a mixt. of heparan sulfate proteoglycans and chondroitin sulfate proteoglycans. Differential incorporation of [35S]sulfate into peak I among normal mucosa, primary colon carcinoma, and colon carcinoma metastasis was obsd. Therefore, decreased peak I prodn. may be a biochem. change assocd. with colorectal **cancer** progression and metastasis.
AN 107:56734 CA
TI Differential production of high molecular weight sulfated glycoproteins in normal colonic mucosa, primary colon carcinoma, and metastases
AU Yamori, Takao; Kimura, Hitomi; Stewart, Kendal; Ota, David M.; Cleary, Karen R.; Irimura, Tatsuro
CS Tumor Inst., M. D. Anderson Hosp., Houston, TX, 77030, USA
SO Cancer Research (1987), 47(10), 2741-7
CODEN: CNREA8; ISSN: 0008-5472
DT Journal
LA English

L5 ANSWER 33 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB The localization of various kinds of acidic glycosaminoglycan (GAG) and sialic acid contained in the stroma adjacent to intact gastric **cancer** cells and preoperatively irradiated gastric **cancer** cells were histochemically re-analyzed in this study. In addition, the presence of keratanase, **chondroitinase** ABC protease free, heparitinase and heparinase, which all serve to dissimilate GAG, were observed. As tissue stain methods, we employed toluidine blue metachromasia staining (pH 4.1 TBM) as well as alcian blue staining (pH 2.5 AB). And then commercially available GAG-dissimilative enzymes and neuraminidase were used. The results obtained are as follows; 1) Large amounts of GAGs, mainly hyaluronic acid (HA) and chondroitin sulfate A.C(ChS-A,C), were contained in the stroma adjacent to **cancer** cells; heparan sulfate (Hep-S) and keratan sulfate (KS) were also detected. 2) The stroma adjacent to **cancer** cells degenerated by preoperative irradiation was also found to contain abundant GAGs, which were chiefly composed of HA and ChS-A, C, as seen in the components of non-irradiated **cancer** tissue. Hep-S and KS were seen as well. 3) In many cells producing mucus, sialic acid was contained in a large

amount.
AN 1988:223390 BIOSIS
DN BA85:112625
TI A HISTOCHEMICAL STUDY ON THE GASTRIC CANCER STROMA.
AU YAMADA T
CS DEP. ANATOMY, TOKYO MED. COLL.
SO J TOKYO MED COLL, (1987) 45 (6), 1048-1060.
CODEN: TIDZAH. ISSN: 0040-8905.
FS BA; OLD
LA Japanese

L5 ANSWER 34 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 23
AB We have examined the adhesion of primary Sertoli cells to a seminiferous tubule basement membrane (STBM) preparation in vitro. The STBM isolation procedure (Watanabe, T. K., L. J. Hansen, N. K. Reddy, Y. S. Kanwar, and J. K. Reddy, 1984, **Cancer** Res., 44:5361-5368) yields segments of STBM that retain their histotypic form in both three-dimensional tubular geometry and ultrastructural appearance. The STBM sleeves contain two laminae: a thick, inner basal lamina that was formed in vivo between Sertoli cells and peritubular myoid cells; and a thinner, outer basal lamina that was formed between myoid cells and sinusoidal endothelial cells. Characterization by immunofluorescence and SDS PAGE revealed that the isolated STBM retained fibronectin, laminin, and putative type IV collagen among its many components. When the STBM sleeves were gently shaken with an enriched fraction of primary Sertoli cells, the Sertoli cells bound preferentially to the lumenal basal lamina at the ends of the STBM sleeves. Few Sertoli cells bound to either the outer basal lamina of the STBM sleeves or to vascular extracellular matrix material which contaminated the STBM preparation. 3T3 cells, in contrast, bound to all surfaces of the STBM sleeves. Pretreatment of the STBM sleeves with proteases, 0.1 M Na metaperiodate, 4 M guanidine HCl, or heating to 80.degree.-90.degree. C inhibited lumenal Sertoli cell binding, but binding was not inhibited by **chondroitinase** ABC, heparinase, hyaluronidase, or 4 M NaCl. The lumenal Sertoli cell binding occurred in the presence or absence of added soluble laminin or fibronectin. The addition of soluble laminin, but not fibronectin, restored random binding of Sertoli cells to trypsinized STBM sleeves. Our in vitro model system indicates that Sertoli cells recognize differences in two basal laminae produced in vivo on either side of myoid cells.
AN 1986:459729 BIOSIS
DN BA82:116571
TI SERTOLI CELL BINDING TO ISOLATED TESTICULAR BASEMENT MEMBRANE.
AU ENDERS G C; HENSON J H; MILLETTE C F
CS LAB. OF HUMAN REPRODUCTION AND REPRODUCTIVE BIOL., HARV. MED. SCH., BOSTON, MASS. 02115.
SO J CELL BIOL, (1986) 103 (3), 1109-1120.
CODEN: JCLBA3. ISSN: 0021-9525.
FS BA; OLD
LA English

L5 ANSWER 35 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 24
AB The murine monoclonal antibody (MAb) designated DF3 has defined a high m.w. antigen detectable in human breast carcinomas and in human milk. DF3 antigen is detectable on apical borders of secretory mammary epithelial cells and in the cytosol of less differentiated malignant cells. DF3 antigen expression has been shown to correlate with the degree of human breast tumor differentiation, and the detection of a cross-reactive species in human milk has suggested that DF3 antigen might be useful as a biochemical marker of differentiated mammary epithelial cells. To further characterize DF3 antigen, we have developed an approach to purify the cross-reactive species by using gel filtration and antibody affinity chromatography. The affinity column-purified DF3 antigen was absorbed by

wheat germ agglutinin and peanut agglutinin, but not by concanavalin A or lentil lectin. In contrast, wheat germ agglutinin inhibited MAb DF3 reactivity with the purified antigen, whereas there was little, if any, inhibition when using peanut agglutinin. These findings are thus consistent with the involvement of terminal N-acetyl-D-neuraminic acid and/or N-acetylglucosamine residues in the antigenic site. DF3 antigenicity was also sensitive to neuraminidase, but not **chondroitinase** ABC, **chondroitinase** AC, chondroitin-4-sulfatase, or hyaluronidase. Furthermore, DF3 antigen was sensitive to Pronase, subtilisin BPN', and .alpha.-chymotrypsin. The presence of O-glycosidic linkages between carbohydrate and protein in the DF3 antigenic site was further supported by the presence of NaBH4-sensitive sites. Together, these results suggest that sialyl oligosaccharides present on a peptide backbone are required for maintaining DF3 antigenicity. Similar findings have been demonstrated for DF3 antigen purified from both human milk and breast **cancer** effusions. However, the DF3 antigen in human milk consisted of a single high m.w. species, whereas the tumor-associated antigen consisted of two distinct glycoproteins with m.w. of 330,000 and 450,000. These findings may be relevant to the recent demonstration that distinct high m.w. DF3 antigens are elevated in the circulation of patients with breast carcinoma.

AN 1986:133932 BIOSIS
DN BA81:44348
TI PURIFICATION AND CHARACTERIZATION OF A HIGH MOLECULAR WEIGHT GLYCOPROTEIN DETECTABLE IN HUMAN MILK AND BREAST CARCINOMAS.
AU SEKINE H; OHNO T; KUFE D W
CS DANA-FARBER CANCER INST., 44 BINNEY ST., BOSTON, MASS. 02115.
SO J IMMUNOL, (1985) 135 (5), 3610-3615.
CODEN: JOIMA3. ISSN: 0022-1767.
FS BA; OLD
LA English

L5 ANSWER 36 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 25

AB Sulfation of glycosaminoglycans (GAGs) secreted by baby hamster kidney (BHK) cells and the polyoma virus-transformants (PY-BHK) was investigated. It has been reported that chondroitin sulfate (CS) of cell membranes from PY-BHK cells is undersulfated compared to that from BHK cells (**Cancer** Res. 43, 2712-2717, 1983). In the first series of experiments of the present study, cells were incubated with [3H]glucosamine and [35S]sulfate, and GAGs isolated from the culture medium were examined. GAG composition was comparable between the BHK and PY-BHK cultures. Disaccharide analysis of the **chondroitinase** ACII digests of the hyaluronate lyase-resistant materials showed a high proportion (68% for BHK and 47% for PY-BHK) of .DELTA.Di-0S, with .DELTA.Di-4S (32% for BHK and 53% for PY-BHK) as the major sulfated disaccharide on the basis of 3H-radioactivities. The .beta.-D-xyloside treatment did not alter the degree of undersulfation of the CS of either culture. In the second series of experiments, disaccharide analysis of the **chondroitinase** ABC digests of unlabeled GAGs demonstrated similar disaccharide composition for the two cell types. The BHK and PY-BHK preparations showed 28 and 17% (mol percent) of .DELTA.Di-0S, 58 and 72% of .DELTA.Di-4S, and 14 and 11% of .DELTA.Di-6S, respectively. These results indicate a considerable degree of undersulfation of secretory CS from both cells, and a slightly higher degree, if any, of undersulfation of secretory CS from BHK cells if compared between the two cell types, which is in contrast to the results reported for membrane CS.

AN 1986:143903 BIOSIS
DN BA81:54319
TI SULFATION OF CHONDROITIN SULFATE SECRETED BY BABY HAMSTER KIDNEY CELLS AND THEIR POLYOMA VIRUS-TRANSFORMED COUNTERPARTS.
AU SUGAHARA K; FUKUI S; YAMASHINA I
CS DEP. BIOL. CHEM., FAC. PHARMACEUTICAL SCI., KYOTO UNIV., SAKYO-KU, KYOTO,

KYOTO 606.
SO J BIOCHEM (TOKYO), (1985) 98 (4), 875-886.
CODEN: JOBIAO. ISSN: 0021-924X.
FS BA; OLD
LA English

L5 ANSWER 37 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB The clinical and operative findings in 26 patients with pancreatic carcinoma were studied according to the General Rules for Surgical and Pathological Studies on **Cancer** of Pancreas edited by the Japanese Pancreatic Society. By staining with Alcian blue (AB) plus Toluidine blue (TB) and treatment with several acid mucopolysaccharides (AMPS) digesting enzymes, the histochemical examination of mucosubstances was made using the fixed and sectioned materials of the pancreatic carcinoma. Several stainings were performed to the 15 cases of duct cell carcinoma of resected pancreatic carcinomas with AB staining at pH 1.0 and pH 2.5, TB staining at pH 2.5 and pH 4.1 and PAS staining. Several enzymic digesting methods were performed on 15 with duct cell carcinoma of resected pancreatic carcinomas with Testicular Hyaluronidase, Streptomyces Hyaluronidase, **Chondroitinase** ABC, **Chondroitinase** AC-II and Neuraminidase respectively. The following results were obtained. 2/3 of resected patients had a tumor exceeding 4.1 cm. In over 70%, there was infiltration into the capsule of the pancreas and to the portal vein system and the majority (92%) were stage III to IV. In the histopathologic classification, 23 of resected 26 were cases of duct cell carcinoma and 18 were tubular adenocarcinoma. Histopathologically, many cases were IFN .gamma., ly, s and ew positive ones. Cellular and structural atypism were also strong. Lymph node metastasis was microscopically evident in about 80% of cases. With AB staining, the stainability in the well differentiated cases of pancreatic carcinoma was stronger in the interstitial portion than in the parenchymal portion and this tendency was stronger in the poorly differentiated than in the well differentiated cases. With TB staining, the stainability in the well differentiated cases was similar both in the parenchymal and interstitial portion. The tendency was relatively strong in the poorly differentiated compared with the well differentiated cases. In the enzymic digesting test, AMPS were seen to be moderate in the interstitial portion and sialic acid was seen slightly both in the parenchymal and interstitial portion of the well differentiated cases. On the other hand, AMPS were seen to be moderate in the parenchymal portion and abundantly in the interstitial one and sialic acid was seen moderately in the interstitial portion and was not seen in the parenchymal portion of the poorly differeniated cases. Most of resected pancreatic carcinomas were highly infiltrative and advanced. With histochemical analysis, AMPS were seen more frequently in the interstitial portion of the poorly differentiated than in the well differentiated cases and sialic acid was also seen in the interstitial portion of the poorly differentiated cases. These results suggest that AMPS and sialic acid are related to the development and growth-promoting effect of pancreatic carcinoma.
AN 1986:202690 BIOSIS
DN BA81:93990
TI CLINICAL AND HISTOCHEMICAL STUDIES ON RESECTED PANCREATIC CARCINOMA WITH REFERENCE TO MUCOSUBSTANCES IN THE TUMOR TISSUES.
AU YAMAMOTO S
CS FIRST DEPARTMENT OF SURGERY, OSAKA CITY UNIVERSITY MEDICAL SCHOOL.
SO J OSAKA CITY MED CENT, (1985 (RECD 1986)) 34 (2), 169-202.
CODEN: OIGZDE. ISSN: 0386-4103.
FS BA; OLD
LA Japanese

L5 ANSWER 38 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 26
AB Seventy-five prostatic specimens from **cancer**, BPH [benign prostatic hypertrophy] and normal controls were studied by light

microscopic histochemical methods for the demonstration of complex carbohydrates and some proteins: alcian blue (AB) (pH 1.0,) AB (pH 2.5), Periodic Acid-Schiff (PAS), peroxidase labeled-Ricinus communis agglutinin-diaminobenzidine (PO-RCA-DAB), Concanavalin A-peroxidase-diaminobenzidine (ConA-PO-DAB), ConA-PO-DAB-periodic acid-m-aminophenol Fast black salt K (ConA-PO-DAB-PA-AP-FBK). For identifying individual acidic and neutral carbohydrates, following procedures of enzyme digestion were performed upon some tissue sections prior to the above histochemical staining: sialidase (prior to staining with AB at pH 2.5), streptomyces hyaluronidase (prior to staining with AB at pH 2.5), testicular hyaluronidase (prior to staining with AB at pH 1.0 or pH 2.5), **chondroitinase** ABC (prior to staining with AB at pH 1.0 or pH 2.5), **chondroitinase** AC (prior to staining with AB at pH 1.0 or pH 2.5) and .alpha.-amylase (prior to staining with PAS). In addition, the tissue specimens from prostatic **cancer** were stained immunohistochemically for demonstration of prostatic acid phosphatase (PAP); serum PAP levels were also measured by radioimmunoassay. In the tissue of prostatic **cancer**, chondroitin sulfate A, C and hyaluronic acid were present in the interstitium. Chondroitin sulfate, hyaluronic acid and sialic acid were present in the cytoplasm of **cancer** cells. In the tissue of BPH chondroitin sulfate B and hyaluronic acid was present in the interstitium and hyaluronic acid was present in the cytoplasm of epitherial cells. In the epithelial basement membrane of the tissue from BPH, chondroitin B and hyaluronic acid were present. 1,2-Glycol groups of neutral complex carbohydrates in the interstitium of prostatic **cancer** were shown to exist in smaller amounts than in that of BPH. In the cytoplasm of **cancer** cells the intensity of both PO-RCA-DAB and ConA-PO-DAB staining could be divided into 3 groups: strong, moderate and weak. In the prostatic **cancer** there was a good correlation between the intensity of PO-RCA-DAB staining and tumor grade; intensity of ConA-PO-DAB staining correlated well with serum PAP level. The cytoplasm of **cancer** cells showed a positive reaction to PAP immunostaining and no appreciable difference was observed according to tumor grade. The histochemical procedures might provide important information to diagnose prostatic **cancer** with more accuracy and evaluating management in more detail in comparison with the previous available histopathological methods.

AN 1985:344491 BIOSIS
DN BA80:14483
TI HISTOCHEMISTRY OF COMPLEX CARBOHYDRATES IN PROSTATIC TUMORS.
AU SUGIYAMA T
CS DEP. OF UROLOGY, SCHOOL OF MEDICINE, NAGOYA UNIVERSITY.
SO ACTA UROL JPN, (1985) 31 (1), 49-69.
CODEN: HIKYAJ. ISSN: 0018-1994.
FS BA; OLD
LA Japanese

L5 ANSWER 39 OF 42 MEDLINE
AB A case of breast **cancer** with cartilage-like structure is presented. The stroma, resembling cartilagenous martrix upon hematoxylin and eosin staining, showed metachromasia upon toluidine blue staining. However, predigestion with hyaluronidase or **chondroitinase** ABC revealed no change in toluidine blue (pH 2.5) staining, suggesting the absence of not only hyaluronic acid but also of chondroitin sulfate in this structure. It is therefore reasonable to conclude that the cartilage-like structure found in this case may have been derived from epithelial mucinous substances, similar to those observed in common mucinous carcinoma of the breast.

AN 84115271 MEDLINE
DN 84115271 PubMed ID: 6663716
TI Case of breast cancer with cartilage-like structure.
AU Samoto T; Kobayashi S; Masaoka A; Nakamura T; Miura K
SO GAN NO RINSHO. JAPANESE JOURNAL OF CANCER CLINICS, (1983 Nov) 29 (14)

1682-5.
Journal code: 1257753. ISSN: 0021-4949.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA Japanese
FS Priority Journals
EM 198403
ED Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19840306

L5 ANSWER 40 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 27
AB Heparan sulfate fractions were isolated from 3 normal human livers and 3 **cancerous** human liver tissues and their polyanionic properties were examined using electrophoresis, sequential partition fractionation and chemical analyses. More than 60% of total glycosaminoglycans from normal human liver and .apprx. 30% from **cancerous** liver tissue were found to be heparan sulfate from their resistance to exhaustive digestion with **chondroitinase** ABC and their susceptibility to nitrous acid treatment. The heparan sulfate isolated from **cancerous** liver tissue afforded a lower sulfate/uronic acid molar ratio (0.58-0.65) than did normal human liver heparan sulfate (0.76-0.80). The former showed lower electrophoretic mobility in 0.1 M HCl and a different partition fractionation profile in comparison with the latter. These differences in charge density of the macromolecule were not detected on the chondroitin sulfate and/or dermatan sulfate fractions isolated from normal human liver and **cancerous** liver tissue.
AN 1981:204657 BIOSIS
DN BA71:74649
TI CHANGES IN CHARGE DENSITY OF HEPARAN SULFATE ISOLATED FROM CANCEROUS HUMAN LIVER TISSUE.
AU NAKAMURA N; KOJIMA J
CS DEP. MED., CENT. ADULT DISEASES, OSAKA 1-3-3, NAKAMICHI, HIGASHINARI-KU, OSAKA, 537, JAPAN.
SO CANCER RES, (1981) 41 (1), 278-283.
CODEN: CNREA8. ISSN: 0008-5472.
FS BA; OLD
LA English

L5 ANSWER 41 OF 42 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB The cell surface glycoconjugates of various rat ascites hepatoma cell lines with different degrees of adhesiveness were compared by binding assays using 125I-labeled lectins. The effects of neuraminidase, TPCK-trypsin and **chondroitinase** ABC treatment on the number of lectin receptor sites were studied. The TPCK-trypsin treatment caused a marked decrease in the number of peanut agglutinin receptor sites on the island-forming and mixed cell types. The decrease of wheat germ agglutinin receptor sites and the increase of castor bean agglutinin receptor sites after neuraminidase treatment were larger on the free cell type. It is possible that .alpha.-sialyl-.beta.-D-galactosyl residues are abundant on the cell surface of this type and that its low cell adhesiveness may be due to a electrostatic repulsion of negative charges of the sialic acid. [The role of cell adhesion in **cancer** is discussed.]
AN 1982:282614 BIOSIS
DN BA74:55094
TI DIFFERENCE OF LECTIN RECEPTORS BETWEEN THE FREE CELL TYPE AND ISLAND FORMING CELL TYPE OF RAT ASCITES HEPATOMA CELLS.
AU KITAGAKI H; MATSUMOTO I; SENO N; NAGASE S
CS DEP. CHEM., FAC. SCI., OCHANOMIZU UNIV., BUNKYO-KU, TOKYO 112, JAPAN.
SO NAT SCI REP OCHANOMIZU UNIV, (1981 (RECD 1982)) 32 (2), 115-126.
CODEN: NASOA5. ISSN: 0029-8190.
FS BA; OLD
LA English

L5 ANSWER 42 OF 42 CA COPYRIGHT 2003 ACS DUPLICATE 28

AB Glycosaminoglycans were characterized from a normal human breast cell line (HBL-100) and two different cell lines from human breast carcinoma (MDA-MB-231 and MCF-7). The glycosaminoglycans were labeled by exposure of cell cultures to glucosamine-3H and sulfate-35S and then isolated from both spent media and cells by pronase digestion and cetylpyridinium chloride fractionation. They were further characterized by hexosamine compn., controlled-pore glass exclusion chromatog., reactivity with specific enzymes (hyaluronidase, **chondroitinase**, heparitinase, and heparinase), nitrous acid degrdn., and DEAE-Sephadex chromatog. The results indicated that the HBL-100 line synthesized mainly hyaluronic acid, most of which was secreted into the medium. Chondroitin sulfate and heparan sulfate were the predominant glycosaminoglycans synthesized by the **cancer** lines. Both were found mainly in the spent medium, but the hyaluronic acid synthesized by the MDA-MB-231 line remained cell assocd. The cell-assocd. heparan sulfate had a mol. wt. in excess of 13,000 and may contain linkages susceptible to testicular hyaluronidase. The MCF-7 cells produced significantly lower amts. of glycosaminoglycans than did the other two lines.

AN 90:135939 CA

TI Glycosaminoglycans of normal and malignant cultured human mammary cells

AU Chandrasekaran, E. V.; Davidson, Eugene A.

CS Spec. Cancer Res. Cent., Pennsylvania State Univ., Hershey, PA, USA

SO Cancer Research (1979), 39(3), 870-80
CODEN: CNREA8; ISSN: 0008-5472

DT Journal

LA English